

**METHOD FOR FABRICATING A SELF-ALIGNED NANOCOLUMNAR
AIRBRIDGE AND STRUCTURE PRODUCED THEREBY**

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ABSTRACT OF THE DISCLOSURE

A method for fabricating a low k, ultra-low k, and extreme-low k multilayer interconnect structure on a substrate in which the interconnect line features are separated laterally by a dielectric with vertically oriented
10 nano-scale voids formed by perforating it using sub-optical lithography patterning and etching techniques and closing off the tops of the perforations by a dielectric deposition step. The lines are supported either by solid or patterned dielectric features underneath. The method avoids the issues associated with the formation of air gaps after the fabrication of
15 conductor patterns and those associated with the integration of conventional low k, ultra-low k and extreme low k dielectrics which have porosity present before the formation of the interconnect patterns.